

## WRITTEN QUESTIONS TO JONATHAN SHEPHERD RE FISHMEAL AT NOSB AQUACULTURE MEETING

1. Please comment on reports that use of processing trimmings in fish feed has caused disease due to high ash levels ?

*Answer: Fishmeal with a high ash content has been linked with cataracts or `skeletal problems in young fast-growing fish (eg salmon smolts). For example high ash, and hence calcium, levels have caused induced zinc deficiency resulting in cataracts and blindness in salmon or trout. Nowadays formulators know more about the required calcium and phosphorus levels and the risks of blocking the absorption of zinc and other nutritional factors.*

2. How can one ensure that reduction fisheries remain sustainable in the long term (eg taking account of global warming) instead of being simply stable in the short term ?

*Answer: The best we can do is to have Government policy comply with the FAO Code of Responsible Fishing ie adopt a fishery management system for long term viability and ensure that the rules are properly enforced (eg on illegal fishing, quotas, mesh sizes and so on). There are private accreditation labels now emerging, such as the Marine Stewardship Council and Friends of the Sea, which seek to demonstrate sustainability. Also we in IFFO are developing a Code of Responsible Practice for fishmeal and fish oil production which will incorporate independent verification. As regards the impact of global warming, we are not in a position to speculate given the wide range of scientific opinion on this matter.*